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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,300	11/21/2003	Paul Masami Aoki	D/A 1441	2108
7590	06/13/2006		EXAMINER	
Charles A. Rattner Apt. 7 240 Wardwell St Stamford, CT 06902-5254			NGUYEN, KEVIN M	
			ART UNIT	PAPER NUMBER
			2629	

DATE MAILED: 06/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/719,300	AOKI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kevin M. Nguyen	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 21 November 2003.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-30 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-20, 22-25 and 27-30 is/are rejected.  
 7) Claim(s) 21 and 26 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 21 November 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date. _____ .  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/21/2003</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____ .                                  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

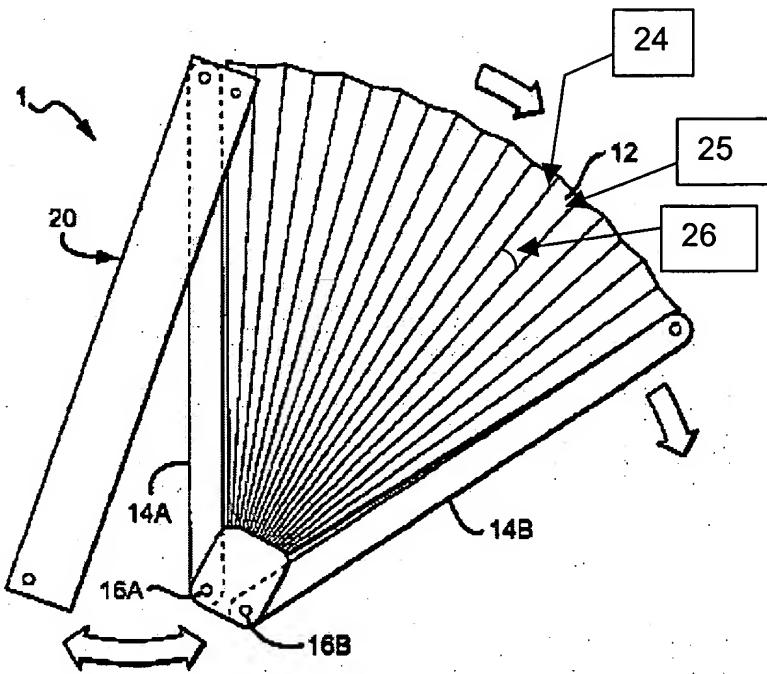
2. Claims 1-8, 11, 12, 15-20, 22-25 and 27-30 are rejected under 35 U.S.C. 102(e) as being anticipated by DuBois (US 6,793,460).

3. As to claim 1, DuBois teaches a fan-shaped display between an expanded configuration with a greater visible area and a collapsed configuration with a smaller visible area [see Figs. 1 and 2], the collapsible display comprising:

at least three collapsible sections [at least three folded display portions 12, Fig. 2], including at least one display section [it is noted that the folded display portions 12 also be made luminous by incorporating LED(s) display device or other devices, see col. 4, lines 1-2], coupled such that when the collapsible display is in the expanded configuration [when the fan-shaped display is unfolded, see Fig. 4], each of the collapsible sections [12] has a first end [24<sup>i</sup>] adjacent to another of the collapsible sections [12], the adjacent ends substantially aligned along an axis each display section [12] further has a second end [25<sup>i</sup>] that is substantially opposite to the first end [24<sup>i</sup>] and substantially oblique relative to the first end [two line segments, e.g., the combination of

the first end [24] and the second end [25] forms an acute angle, see Fig. 2, col. 3, lines 9-44 for further details of the explanation].

**FIG. 2**



4. As to claim 2, DuBois further teaches the collapsible display further comprising a pivot [16A, Fig. 2] to which each display sections [12] is connected and about which each display section [12] can rotate [see col. 3, lines 30-44 for details of the operation].

5. As to claim 3, DuBois further teaches wherein at least one of the display sections [12, Fig. 2] is rotatable between: a first position [a closed position] about the pivot [16A] in which the display section [12] overlaps significantly with another of the display sections [12] such that the display sections [a plurality of display sections 12] occupy the smaller visible area [see Fig. 3], and a second position [an open position] about the pivot [16A] where the display sections [the plurality of display sections 12] occupy the greater visible area [see Figs. 1-3, col. 3, lines 9-44 for further details of the operation].

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6. As to claim 4, DuBois further teaches wherein at least one of the display sections [12] is rotatable between a first position [a closed position] about the pivot [16A] in which the collapsible display [12] occupies the smaller visible area [the closed position of the fan-shaped display], and a second position [an open position] about the pivot [16A] where the collapsible display [12] occupies the greater visible area [the open position of the fan-shaped display, see Figs. 1-3, col. 3, lines 9-44 for further details of the operation].

7. As to claim 5, DuBois further teaches comprising a hinge element [24<sup>i</sup>, Fig. 2] for enabling the display sections [12] to rotate on an axis; two opposing panels [12]; an additional hinge element [25<sup>i</sup>, Fig. 2] for connecting adjacent sides of the two opposing panels and further for allowing the two opposing panels to rotate between an open position and a closed position, wherein the display sections [12] are coupled to the two opposing panels such that the display sections [12] are collapsed when the two opposing panels are in the closed position and the display sections are expanded when the two opposing panels are in the open position [see col. 3, lines 9-44 for further details of operation].

8. As to claims 6 and 7, DuBois further teaches comprising a section of a flexible display membrane secured to each of the display sections, and said display membrane comprising an electric paper [it is also contemplated that some fans may be made luminous by incorporating one or more lights, LED(s) display device or other devices, see col. 3, line 63 -- col. 4, line 2. Thus, the fan portion (1) has an electric paper corresponding to a flexible display membrane as claimed].

9. As to claim 8, DuBois further teaches comprising an electronic device for providing display instructions to the display membrane [see col. 3, lines 45-62 for further details of the explanation].

10. As to claim 11, DuBois further teaches wherein the display section extends from one of: a side [14A, Fig. 2] and a corner [15, Fig. 1] of the electronic device [see Fig. 2, col. 3, lines 30-44 for further details of the operation].

11. As to claim 12, DuBois further teaches wherein the collapsed display membrane is at least partially retractable into a body of the electronic device [the fans-shaped is in the closed and open positions, see Figs. 1-7, cols. 3 and 4, for further details of the explanation].

12. As to claim 15, DuBois teaches a collapsible display deformable between an expanded configuration with a greater visible area and a collapsed configuration with a smaller visible area, the collapsible display comprising:

a flexible display membrane [it is also contemplated that some fans may be made luminous by incorporating one or more lights, LED(s) display device or other devices, see col. 3, line 63 -- col. 4, line 2. Thus, the fan portion (1) has an electric paper corresponding to a flexible display membrane as claimed]; and

at least one support member [14A, see Fig. 2] connected to the flexible display membrane [12], for supporting a portion of the flexible display membrane [12] during an out-of-plane deformation [see Figs. 1-3, col. 3, lines 9-44 for further details of the explanation].

13. As to claim 16, DuBois further teaches comprising a pivot [16A, see Fig. 2], and each support member [14A] connected to the pivot [16A] about which the support member [14A] can rotate [see col. 3, lines 9-44 for further details of the operation].
14. As to claim 17, DuBois further teaches said at least one support member [14A] is rotatable between a first position about the pivot [16A], in which the portion of the flexible display membrane [12] overlaps significantly with a second portion of the flexible display membrane [12] such that the flexible display membrane [12] occupies a smaller visible area, and a second position about the pivot in which the first and second portions of the flexible display membrane occupy a greater visible area [the fan-shaped display device is in the closed and open positions, see Figs. 1-7, cols. 3 and 4, for further details of the operation].
15. As to claim 18, DuBois further teaches comprising two opposing panels [two display sections 12, Fig. 2]; and a hinge element [an axis 24 coincide with the hinge, Fig. 2] for connecting adjacent sides of the two opposing panels and further for allowing the two opposing panels to rotate between an open position and a closed position, wherein the flexible display membrane [12] is secured to the two opposing panels at a plurality of positions such that the at least one display section is collapsed when the two opposing panels are in the closed position and the at least one display section is expanded when the two opposing panels are in the open position [the fan-shaped display device is in the closed and open positions, see Figs. 1-7, cols. 3 and 4, for further details of the operation].

16. As to claim 19, DuBois further teaches wherein the at least one support member [14A, Fig. 2] is secured to positions along an outer periphery [a first spoke 14A coincides with an output periphery] of the flexible display membrane [12, see col. 3, lines 9-44 for further details of the explanation].

17. As to claim 20, DuBois further teaches comprising a hub [15, Fig. 1], wherein the at least one support member [14A] is connected to the hub [15] at a first end and secured to positions along an outer periphery of the flexible display membrane [12] at a second end such that each support member is rotatable between a first position about the hub [15] where each support member [14A and 14B] is substantially parallel [see Fig. 6] to each other [when the fan-shaped display is in the closed position], and the flexible display membrane [12] is collapsed to a smaller visible area and a second position about the hub where the flexible display membrane forms at least a portion of a visible area having a greater visible area [when the fan-shaped display is in the open position, see Figs. 1-7, col. 3 and 4, for further details of the operation].

18. As to claim 22, DuBois further teaches comprising an electronic device for providing display instructions to the display membrane [see col. 3, lines 45-62, for further details of the explanation].

19. As to claim 23, DuBois teaches a display apparatus, comprising: a display membrane [a flexible display electronic paper, see the explanation of claims 6 and 7] having at least one individually-deformable section [12, Fig. 2] wherein when an individually-deformable section [12] is collapsed [a closed position of the fan-shaped display device], the collapsed section forms a first geometric configuration having a first

area, and when the collapsed section is expanded, the expanded section forms a second geometric configuration having a second area greater than the first area [an open position of the fan-shaped display device, see Figs. 1-3, col. 3, lines 9-44 for further details of the explanation].

20. As to claim 24, DuBois further teaches comprising: a plurality of support members [14A and 14B] for supporting the display membrane [12], each support member [14A] having a first end connected to a pivot [16A] point about which the support member may rotate to expand and collapse the at least one individually-deformable sections of the display membrane [the open position of the fan-shaped display device, see Figs. 1-3, col. 3, lines 9-44 for further details of the explanation].

21. As to claim 25, DuBois further teaches each of the expanded sections forming a fan-shaped display [a fan-shaped display (1) is in the open position for display area, which is made luminous by incorporating more lights, LED(s), or other devices, see Fig. 2, col. 4, lines 1-2].

22. As to claim 27, DuBois further teaches comprising: two opposing panels [a left and right display section 12 are symmetric to an axis 24, Fig. 2]; a hinge [24] for connecting adjacent sides of the two opposing panels [12] for allowing the two opposing panels [12] to rotate between an open position and a closed position; and a section of the display membrane [12] connected to at least one of the opposing panels, wherein the section [12] is deformed when the two opposing panels are in the closed position and the section is unfolded when the two opposing panels are in the open position to

form a display area [the closed and open position of the fan-shaped display device, see Figs. 1-3, col. 9-44 for further details of the explanation].

23. As to claim 28, DuBois further teaches comprising a display hub [15, Fig. 1] for connecting the at least one individually deformable section [12] of the display membrane; and at least one support member [14A] for expanded and collapsing the at least one individually-deformable section [12] between the first and the second geometric configurations about the hub [the closed and open position about the hub 15, see Figs. 1-3, col. 3, lines 9-44 for further details of the explanation].

24. As to claim 29, DuBois teaches a method for operating a foldable display, comprising:

rotating a support member [14A, Fig. 2] for a display [12] from a first position [a closed position] to a second position [an open position] about a pivot [16A, Fig. 2] to expand at least a portion of a visual display [see col. 3, lines 9-40 for further details of the explanation]; and

rotating the support member [14A] from the second position [the open position] to the first position [the closed position] to collapse the visual display [see Fig. 3, col.3, lines 9-40 for further details of the explanation].

25. As to claim 30, DuBois teaches a method for operating an electronic display [see the explanation of claims 6 and 7], comprising:

unfolding a pair of opposing hinged panel sections [two axes 24 and 25 coincide with the hinge, see Fig. 2], at least one of the hinged [24] panel sections [12] connected to a section of a display membrane that is unfolded in an opposite position from the pair

of opposed hinged panel sections [24, 25] to form a display area [the fan-shaped display area is in the open position]; and folding the pair of opposing hinged panel sections, thereby collapsing the display area [the fan-shaped display area is in the closed position, see Figs. 1-3, col. 9-44 for further details of the explanation].

***Claim Rejections - 35 USC § 103***

26. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

27. Claims 9, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over DuBois in view of Latocha et al (US 5,790,371) hereinafter Latocha.

28. As to claim 9, DuBois teaches all of the claimed limitation, except for said electronic device comprising at least one of a display controller. However, Latocha teaches an electronic device comprising at least one of a display controller [a computer unit, see col. 5, lines 49-60 for further details of the explanation].

29. As to claim 13, Latocha further teaches the display membrane comprising a plurality of pixels forming a visual display area having a display layer [it is noted that the text/graphics/windows/images are displayed on the flexible display screen. The text/graphics/windows/images are made up of a plurality of pixels, see col. 4, lines 3-33 for further details of the explanation].

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30. As to claim 14, Latocha further teaches the display membrane further comprising a control layer for addressing the plurality of pixels [a computer unit controls driving and addressing all the pixels on the screen, see col. 5, lines 49-60 for further details of the operation].

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to implement the computer unit that drives the text/graphics/windows/images being displayed on the flexible display screen as taught by Latocha to the intended use for applying to the fan-shaped display device of DuBois, because this would provide an electronic working surface with a sensitive top surface in which the arrangement and size of the working surface can be adapted to the purpose of use [see Latocha, col. 1, lines 58-61].

31. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over DuBois in view of Comiskey et al (IDS cited, US 6,473,072) hereinafter Comiskey.

DuBois teaches all of the claimed limitation of claim 1, except for said electronic device comprising a display wand for addressing the visual display elements of at least a portion of the display membrane.

However, Comiskey teaches a display wand [a scanning display device, see Figs. 15b, and 16a-16f] for addressing the visual display elements of at least a portion of the display membrane [an electronic paper, see col. 2, lines 51-60, and col. 17, lines 1-63 for further details of the explanation].

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the scanning in the electronic paper as taught by

Comiskey for the intended use for applying to the fan-shaped display device of DuBois, because this would provide the excellent contrast and brightness of the erasable drawing/marking/images being displayed on the electronic paper, while fabricating the lifetime issues [see Comiskey, col. 5, lines 14-18, and col. 13, lines 58-67].

***Allowable Subject Matter***

32. Claims 21 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

33. The following is a statement of reasons for the indication of allowable subject matter:

The prior arts made of record and not relied upon are considered pertinent to applicant's disclosure. Levin (US 4,601,120), Failla (US 5,128,662), Sawyer (US 6,762,929), Shiratori et al. (US 6,776,579), Lien (US 6,830,430), and Wong et al. (US 6,943,773).

Cited prior arts, single or combination, do not teach or fairly suggest the features "a display apparatus further comprising a deformable rim forming an outer periphery of the flexible display membrane, wherein the at least one support member is secured to positions along the deformable rim and the deformable rim is biased to allow a section of the flexible display membrane to be twisted about at least one axis to form the collapsed configuration and untwisted about the at least one axis to form the expanded

configuration," [Fig. 12], as recited in claim 21; and "the display apparatus further comprising a deformable rim around the section of the display membrane, wherein the deformable rim is biased to allow the section to be twisted about at least one axis to form a collapsed position and untwisted about the at least one axis to form a visual display area," [Fig. 12], as recited in claim 26, taken in combination with the other features in independent claims.

### Conclusion

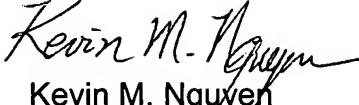
Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN M. NGUYEN whose telephone number is 571-272-7697. The examiner can normally be reached on MON-THU from 8:00-6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, a supervisor RICHARD A. HJERPE can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8000.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the Patent Application Information Retrieval system, see <http://portal.uspto.gov/external/portal/pair>. Should you have questions on access to the

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Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197  
(toll-free).



Kevin M. Nguyen  
Patent Examiner  
Art Unit 2629

KMN  
June 9, 2006

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<sup>i</sup> It is respectfully submitted that in the case law stated "Drawing as a Reference", "Things clearly shown in reference patent drawing qualify as prior art features, even though unexplained by the specification". See In re Mraz, 173 USPQ 25 (CCPA 1972). "A claimed invention may be anticipated or rendered obvious by a drawing in a reference, whether the drawing disclosure by accidental or intentional. However, a drawing is only available as a reference for what it would teach one skilled in the art who did not have the benefit of applicant's disclosure". See In re Meng, 181 USPQ 94, 97 (CCPA 1974). "Absent of any written description in the reference specification of quantitative values, arguments based on measurement of a drawing are of little value in proving anticipation of a particular length". See In re Wright, 193 USPQ 332, 335 (CCPA 1977).